Supplementary Appendix S8

Canadian Society For Exercise Physiology Position Stand on the Acute Effects of Muscle Stretching on Physical Performance, Range of Motion and Injury Incidence in Healthy Active Individuals

RECOMMENDATIONS

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Muscle stretching in some form appears to be of greater benefit than cost (in terms of performance, ROM and injury outcomes) but the type of stretching chosen and the make-up of the stretch routine will depend on the context within which it is used. SS and PNF stretching are not recommended if prolonged (>60s total per individual muscle) stretching is employed within 5 min of an activity without subsequent dynamic activity (e.g. if prolonged stretching immediately precedes training or competition), unless the requirements for increases in ROM and/or decrease in (specifically) muscle injury outweigh the requirement for optimum physical performance. Injury reduction appears to require more than 5 min of total stretching of multiple task-related muscle groups. However, when an optimal pre-event warm-up with an appropriate duration of stretching is completed (i.e. initial aerobic activity, stretching component, task- or activity-specific dynamic activities) the benefits of SS and PNF stretching for increasing ROM and reducing muscle injury risk at least balance, or may outweigh, any possible cost of performance decrements. SS also appears to enhance performance in activities performed at long muscle lengths. DS may induce moderate performance enhancements and may be included in the stretching component to provide task-specific ROM increases and facilitation of dynamic SSC performance when performed soon before an activity, and/or when a full pre-activity routine is not completed; however there is no evidence as to whether it influences injury risk. Furthermore, while the literature examining the effect of stretching on physical performance is extensive, the literature examining injury risk is much smaller, and thus more research needs to investigate the effect of muscle stretching on injury risk.